

CLAIMS

1. An isolated nucleic acid comprising a nucleotide sequence encoding an CRSP-1 polypeptide.

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2. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide is a mammalian polypeptide.

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3. The isolated nucleic acid of claim 2, wherein the CRSP-1 polypeptide is a human polypeptide.

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4. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide has an overall amino acid homology of at least about 70% with the amino acid sequence set forth in SEQ ID NO: 2.

5. The isolated nucleic acid of claim 4, wherein the CRSP-1 polypeptide has the amino acid sequence set forth in SEQ ID NO: 2.

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6. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide is a mature form of an CRSP-1 polypeptide.

7. The isolated nucleic acid of claim 6, wherein the CRSP-1 polypeptide comprises at least about amino acid 21 to about amino acid 172 of SEQ ID NO: 2.

8. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide comprises an amino acid sequence which is at least about 70% similar to at least about 15 consecutive amino acid residues of SEQ ID NO: 2.

5 9. The nucleic acid of claim 1, wherein the CRSP-1 polypeptide comprises an amino acid sequence which is at least about 70% similar to at least about 50 consecutive amino acid residues of SEQ ID NO: 2.

10 10. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide comprises at least about 10 consecutive amino acids of SEQ ID NO: 2.

11. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide comprises at least about 50 consecutive amino acids of SEQ ID NO: 2.

15 12. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide is a functional CRSP-1 polypeptide.

13. The isolated nucleic acid of claim 1, wherein the CRSP-1 polypeptide is capable of interacting with a molecule.

20 14. The isolated nucleic acid of claim 13, wherein the molecule is a receptor.

15. The isolated nucleic acid of claim 1, which has an overall nucleotide identity of at least about 70% with the nucleotide sequence set forth in SEQ ID NO: 1.
- 5 16. The isolated nucleic acid of claim 1, which has an overall nucleotide identity of at least about 70% with the nucleotide sequence set forth in SEQ ID NO: 3.
- 10 17. An isolated nucleic acid comprising a nucleotide sequence which is at least about 80% identical to at least about 50 consecutive nucleotides SEQ ID NO: 1 or complement thereof.
- 15 18. An isolated nucleic acid comprising a nucleotide sequence of at least about 20 consecutive nucleotides of SEQ ID NO: 1 or 3 or complement thereof.
- 20 19. The isolated nucleic acid of claim 18, further comprising a label.
21. A vector comprising a nucleic acid of claim 1.
22. A host cell comprising the vector of claim 21.

23. An isolated CRSP-1 polypeptide.

24. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide is a mammalian polypeptide.

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25. The isolated CRSP-1 polypeptide of claim 24, wherein the CRSP-1 polypeptide is a human polypeptide.

10 26. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide has an overall amino acid homology of at least about 70% with the amino acid sequence set forth in SEQ ID NO: 2.

27. The CRSP-1 polypeptide of claim 26, wherein the CRSP-1 polypeptide has the amino acid sequence set forth in SEQ ID NO: 2.

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28. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide is a mature form of an CRSP-1 polypeptide.

20 29. The isolated CRSP-1 polypeptide of claim 28, wherein the CRSP-1 polypeptide comprises at least about amino acid 21 to about amino acid 172 of SEQ ID NO: 2.

30. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide comprises an amino acid sequence which is at least about 70% similar to at least about 15 consecutive amino acid residues of SEQ ID NO: 2.

5 31. The CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide comprises an amino acid sequence which is at least about 70% similar to at least about 50 consecutive amino acid residues of SEQ ID NO: 2.

10 32. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide comprises at least about 10 consecutive amino acids of SEQ ID NO: 2.

33. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide comprises at least about 50 consecutive amino acids of SEQ ID NO: 2.

15 34. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide is a functional CRSP-1 polypeptide.

35. The isolated CRSP-1 polypeptide of claim 23, wherein the CRSP-1 polypeptide is capable of interacting with a molecule.

20 36. The isolated nucleic acid of claim 35, wherein the molecule is a receptor.

37. A method for modulating an CRSP-1 activity, comprising contacting an CRSP-1 polypeptide with a compound which is capable of modulating a CRSP-1 activity, such that the CRSP-1 activity is modulated.
- 5 38. The method of claim 37, wherein the CRSP-1 activity is modulation of cell proliferation, differentiation or cell survival.
39. The method of claim 38, wherein the compound is an antagonist.
- 10 40. The method of claim 39, wherein the antagonist inhibits the interaction of CRSP-1 with an CRSP-1 receptor.
41. The method of claim 37, wherein the CRSP-1 activity is binding to a molecule.
- 15 42. The method of claim 41, wherein the molecule is an CRSP-1 receptor.
- \ 43. A method for modulating growth, differentiation, or survival of a cell, comprising contacting the cell with an CRSP-1 compound which is capable of modulating cell growth, differentiation, or survival.
- 20 44. The method of claim 43, wherein the compound is an agonist of a CRSP-1 activity.

45. The method of claim 44, wherein the compound is an antagonist of a CRSP-1 activity.
- 5 46. The method of claim 45, wherein the compound is selected from the group consisting of a polypeptide, a nucleic acid, a peptidomimetic, and a small molecule.
- 10 47. The method of claim 46, wherein the nucleic acid is selected from the group consisting of a gene replacement, an antisense, a ribozyme, and a triplex nucleic acid. The method of claim 43, wherein the compound interacts with an CRSP-1 protein.
- 15 48. The method of claim 43, wherein the compound interacts with a CRSP-1 receptor.
- 20 49. The method of claim 48, wherein the compound is a CRSP-1 polypeptide.
150. A method for treating or preventing a disease caused by or contributed to by an aberrant CRSP-1 activity in a subject, comprising administering to the subject an effective amount of a pharmaceutical composition comprising a compound

which is capable of modulating a CRSP-1 activity, such that the disease is treated or prevented in the subject.

51. The method of claim 50, wherein the disease is a hyper- or hypoproliferative
5 disease.

52. The method of claim 52, wherein the compound is an CRSP-1 polypeptide.

53. A method for treating or preventing a disease associated with an abnormal cell
10 proliferation, differentiation or survival in a subject, comprising administering to
the subject a pharmaceutically effective amount of an CRSP-1 therapeutic.

54. The method of claim 53, wherein the disease is a hyperproliferative disease.
15 55. The method of claim 53, wherein the disease is a hypoproliferative disease.

56. A method for identifying a CRSP-1 therapeutic, comprising
20 (i) combining a CRSP-1 protein, a CRSP-1 binding partner, and
a test compound under conditions wherein, but for the test compound, the CRSP-1
protein and CRSP-1 binding partner are able to interact; and
(ii) detecting the formation of a CRSP-1 protein/CRSP-1 binding
partner complex,

such that a difference in the formation of a CRSP-1 protein/CRSP-1 binding partner complex in the presence of a test compound relative to the absence of the test compound is indicative that the test compound is a CRSP-1 therapeutic.

- 5 57. The method of claim 56, wherein the CRSP-1 binding partner is an CRSP-1 receptor.
58. A method for determining whether a subject is at risk of developing a disease or condition which is caused or contributed to by an aberrant CRSP-1 activity,
- 10 comprising measuring in the subject or in a sample obtained from the subject at least one CRSP-1 activity, wherein a difference in the CRSP-1 activity relative to the CRSP-1 activity in a normal subject indicates that the subject is at risk of developing a disease caused by or contributed to by an aberrant CRSP-1 activity.
- 15 59. The method of claim 58, wherein a CRSP-1 activity is determined by measuring the protein level of an CRSP-1 protein.
60. The method of claim 58, comprising the step of determining whether the CRSP-1 gene of the subject comprises a genetic lesion.
- 20 61. The method of claim 60, wherein the step of determining whether the CRSP-1 gene comprises a genetic lesion, further comprises the steps of:

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(i) contacting a nucleic acid comprising at least a portion of the CRSP-1 gene from a subject with at least one nucleic acid probe capable of interacting with a wild-type CRSP-1 gene; and

(ii) detecting the formation of a hybrid between the portion of the CRSP-1 gene from the subject and the at least one nucleic acid probe,

such that the extent of formation of a hybrid between the portion of the CRSP-1 gene from the subject and the at least one nucleic acid indicates whether the subject is at risk of developing a disease associated with an aberrant CRSP-1 activity.